

US DOE ARCHIVES  
326 U.S. ATOMIC ENERGY  
COMMISSION

RG DOE HISTORIAN (DBM)

Collection 1132

Box 335

Folder # 21

# 186  
X1  
PRESS RELEASES

JAPAN - UNITED STATES  
RADIOBIOLOGICAL CONFERENCE

Japan Science Council, Ueno, Tokyo  
Monday, November/5

FOR IMMEDIATE RELEASE

The first session of the Japan-United States Conference on Radiobiology opened at 9 o'clock with addresses of welcome from the Japanese Delegation and response from the United States. Copies of these have already been provided the press.

Following this, the first day was devoted to discussion of the general principles of determining the maximal permissible doses of radiation to humans and their environment, and to practical applications of these principles in determining safe levels of radioactivity in various situations. Papers were presented by three of the visiting delegation from the United States and discussion was participated in by more than half of the Japanese delegation -- those specializing in the subjects under discussion.

The chairman for the morning sessions was Dr. M. Nakaidzumi of the Japanese Delegation; chairman for the afternoon was Dr. Paul B. Pearson of the United States delegation.

Dr. Walter D. Claus of the Atomic Energy Commission, an authority on radiation tolerances, outlined the history of the development of the limits of permissible doses now used in the United States and numerous other countries. Dr. Claus explained the makeup of the International and the United States National Committees on Radiation Protection. The latter, composed of representatives of industry and government, formulates for use in the U. S. the maximal limits for exposure of humans to radiation. Dr. Claus distributed copies of the U. S. National Bureau of Standards Handbooks Nos. 52 and 59 which tabulate and discuss the recommended standards for allowable exposure and discuss the points where there are not enough data to enable a scientific agreement on interpretation or where there are differing views among scientists.

Dr. Claus explained, giving the technical numbers, the standards used in

the United States for exposure to irradiation of the entire body of persons over 45 years of age and under 18 years of age, and the varying amounts of radio activity which may be safely received on parts of the body such as the eyes, the skin, hands and forearms, feet and ankles, and head and neck. He stressed that these standards vary according to whether a person is exposed to radiation in his occupation day in add day out or whether he is accidentally or in an emergency exposed only once in a lifetime. In the latter case, he reported, the National Bureau of Standards Handbook agrees that a person may receive in one dose -- with no later exposure contemplated -- 80 times as much radiation as he could receive in a week if his occupation involved daily exposure to radiation.

Questioning by Japanese members of the Conference about the history and the methods of developing the maximal permissible limits centered on whether enough consideration was given to the genetic effects of radiation -- effects on human inheritance in later generations.

The U. S. Delegation members, including Dr. Claus, called attention to the statements in the Handbooks pointing out that the data are not now available to make final judgments on maximal permissible limits from the genetic standpoint; and that the limits contained in the Handbook should be regarded as guidelines, not as absolute restraints. Most of the recommendations are believed to contain large safety factors so that minor deviations from the limits should not be considered as hazardous.

From consideration of the maximal limits for external radiation, the conference moved to permissible limits for radiation from materials that are breathed in or eaten. It was pointed out by Dr. Claus and by Merrill Eisenbud of the U. S. Delegation that the limits carried in the Handbooks for radiation from substances going into the body are based on data which are not yet entirely definitive and that therefore they have been made quite conservative so that there will be no question of whether harm could result from experiencing radiation up to the limits now established.

The third point touched on was the limits for radioactivity in air, water and food for general populations. It was stated at the start that values given for maximal permissible limits for this part of the human environment are provisional and are controversial owing to the lack of conclusive data on which to base them. Again, it was pointed out that these limits in U. S. practice are set so low that "if you have concentrations of radioactivity less than these amounts you have nothing whatsoever to worry about. If concentrations in air and water are greater than the Handbook values you are not necessarily in danger. In such a case chemical analysis to determine the elements present is indicated."

U. S. Delegate Eisenbud illustrated the extreme conservatism of the standards for radioactivity in air by going through a complicated calculation, coming to the conclusion that it might be that the present safety standard is one thousand times lower than absolutely necessary for protection of health; but it was indicated that no change is in prospect until further data are forthcoming.

The next topic for discussion was the measurement of radioactivity in fish. Dr. Claus opened the discussion by explaining the bases used in the United States for calculating radioactivity which may safely be permitted to exist in or on fish that are to be used for human food. He pointed out that because a person may take at a single meal all the radioactivity that he could take in over a period of several weeks or months with no significant bad effects, occasional failure to detect a fish which would otherwise be discarded is not a reason for alarm.

The speaker's paper gave the assumptions on which the U. S. methods for quick screening of fish for radioactivity at the market wharf are based. His conclusion was that if monitored at a standard distance of ten centimeters fish which gave a radiation count of 500 or less per minute on a gamma counter operated in accordance with definite specifications would be perfectly safe for human consumption. Extensive discussion ensued with members of both delegations taking part. During the exchange of facts and views it was reported that surface contamination of fish was not found in the United States during the extensive monitoring program at ports earlier this year.

There was a brief discussion of methods of monitoring internal radioactivity in fish. Dr. Claus explained that in order to get a reading of internal radioactivity it was necessary to determine the kinds of isotopes contained; then, one method is to make a solution of such radio isotopes in correct proportion, case the solution in a plastic bag approximately the shape of the fish, and monitor this bag to determine the radioactive count.

During the discussion of maximal permissible limits, reference was frequently made to publications and to unpublished research of the Japanese scientists taking part in the meeting and dates were set for presentation later in the week of various of these published and unpublished groups of Japanese data. They will be reported in the press summaries as the presentations are made. The conference today was principally devoted to explanations from the American delegates and questions on these reports from the Japanese scientists.

#####